A New Genus of Moss Mites from Northwestern United States[1]

(Acari : Oribatei, Eremaeidae)

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Recent collecting in the United States has shown a considerable number of undescribed oribatid mites. In collections of these mites taken from rather humid habitats in Oregon, Washington, and Wyoming were specimens of an undescribed, large, heavily pigmented eremaeid mite. A description of this new genus and species follows.

Megeremaeus Higgins and Woolley, new genus

DESCRIPTION.—Large size compared to other known eremaeids; body and legs covered with a heavy cerotegument; pseudostigmata cuplike, the sclerotized rim elevated high above the surface of propodosoma as shown in Fig. 2; two pairs of anteriorly projecting hysterosomal knobs near the straight dorsosejugal suture; ten pairs of flattened, setose hysterosomal setae; six pairs of genital setae; three pairs of anal setae; scattered *pseudoporosae* anterior to setae r_1; trochanters III and IV with a sharp, heavy spine.

Megeremaeus montanus Higgins and Woolley, new species

(Figs. 1–7)

DIAGNOSIS.—Lamellae parallel for most of their length; sensillus shorter than distance between pseudostigmata with a narrow pedicle and flattened, concave, setose head; lamellar hairs weakly setose, longer than sensillus or rostral hairs; interlamellar hairs shorter than sensillus, setose; irregular sclerotizations between pseudostigmata.

DESCRIPTION.—Larger than other known *Eremaeus*; body very dark brown; propodosoma slightly wider than long; rostrum blunt; rostral hairs located on sides of rostrum, inserted about half their lengths from tip, weakly setose and shorter than lamellar hairs; lamellae longer than lamellar hairs, parallel for most of their lengths, curving slightly posteriorly toward pseudostigmata with a smooth, lateral edge and a roughened medial edge; an indistinct transverse line anterior to lamellae; interlamellar hairs shorter than sensilli, robust, setose with small insertions; pseudostigmata cuplike, heavy, the sclerotized rim elevated high above surface of propodosoma as shown in Fig. 2; sensillus nearly three times longer than interlamellar hairs, but shorter than distance between pseudostigmata, with a narrow pedicle and expanded, flattened, concave, setose head; a row of faint, irregular sclerotizations on prodorsum between the pseudostigmata.

Hysterosoma nearly round with a straight dorsosejugal suture; two pairs of conspicuous, anteriorly projecting knobs posterior to pseudostigmata; ten pairs of

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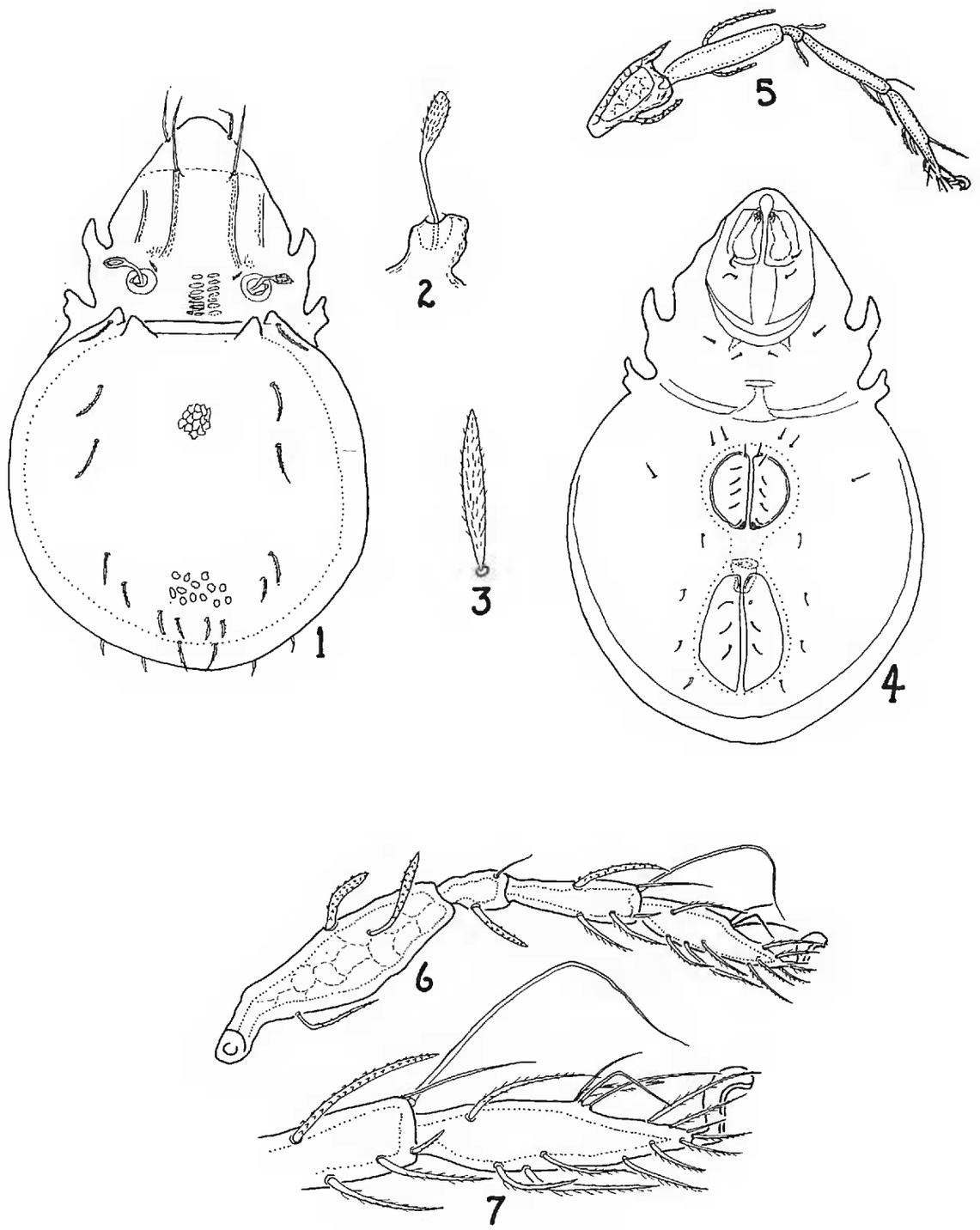

Explanation of Figures

Fig. 1. *Megeremaeus montanus* Higgins and Woolley, new genus and species, dorsal view. Fig. 2. Pseudostigmata and sensillus, lateral view. Fig. 3. Hysterosomal setae, lateral view. Fig. 4. *M. montanus*, ventral view. Fig. 5. Leg IV, lateral view. Fig. 6. Leg I, lateral view. Fig. 7. Tarsus of leg I.

flattened, setose setae with small insertions as shown in Figs. 1 and 3; scattered *pseudoporosae* anterior to setae r_1; entire body heavily pitted and covered with a heavy cerotegument which gives the animal an irregular, reticulate pattern (Fig. 1).

Camerostome oval with flattened sides; apodemata III nearly reaching midline; genital aperture nearly round, more than half its length anterior to anal aperture, each genital cover with six setae in a line along the medial edge; anal aperture trapezoidal, nearly twice as long as genital opening, each cover with three setae; internal preanal piece large and distinct; distinct sclerotizations around genital and anal openings; adgenital setae simple, posterolateral to genital opening; three visible pairs of adanal setae, ada_1 at posterolateral edge of plate, and ada_3 not reaching the anterior level of anal plate; other ventral setae as shown in Fig. 4.

Legs heavy with blunt, heterotridactylus claws, the middle claw being the largest; tarsus I with a famulus–solenidion complex as shown in Figs. 6 and 7; leg IV longer and more slender than other legs; trochanters III and IV with a sharp, heavy spine as shown in Fig. 5.

SIZE.—Length 1,002 μ; width 648 μ.

TYPE LOCALITY.—One type and one paratype specimen were taken from moss and ferns at TORREY FALLS, TRAIL LAKE RANCH, 11 miles southeast of Dubois, Wyoming, 5 July 1964 by H. and M. Higgins.

ADDITIONAL SPECIMENS.—OREGON: Five specimens from moss and duff, 31 July 1962 by T. A. Woolley; four specimens from moss and duff in rain forest, Myrtle Creek, 2 August 1962 by T. A. Woolley; one specimen from a rotten log, Cottage Grove, 26 August 1956 by H. and M. Higgins. WASHINGTON: One specimen from rotting log at Greenwater, 10 June 1962 by H. and M. Higgins. WYOMING: One specimen from Falls Camp Ground, Togowtee Pass, 23 June 1964 by H. Higgins.

DISCUSSION.—*Megeremaeus*, new genus, is larger than any known eremaeid, and appears to show a closer affinity with the *Eremaeus* complex than with *Tricheremaeus*. This affinity is shown by the fewer, shorter hysterosomal setae, the visible internal preanal piece, and the sclerotizations surrounding the genital and anal apertures. It is, however, distinguished from the above-mentioned complex by the two pairs of distinct, anteriorly projecting hysterosomal knobs as well as the greatly elevated pseudostigmata.

Megeremaeus montanus, new species, shows a great deal of individual variation in the small sample studied. Some of these variations are expressed in the length and exact location of the hysterosomal setae. There also appears to be a slight variation in the location of the anal setae and in the length of the sensillus.

The angle from which this species is observed can alter greatly the appearance of the hysterosomal setae and sensillus. When viewed from the edge or from a direct, dorsal position, the hysterosomal setae appear to be narrow, while in reality they are lanceolate (Fig. 3). The sensillus from some angles fails to show the concave aspect of its expanded tip, but rather appears to be long and slightly expanded.

LITERATURE CITED

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New Trichoptera from United States and Mexico

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Since the publication of "Evolution and Classification of the Mountain Caddisflies" by Ross in 1956, there has been a continued interest in the phylogeny and biogeography of the Trichoptera, with most attention given the Rhyacophilidae.

The genitalia of male Rhyacophilinae are so diversified that it is difficult to develop a phylogenetic pattern based only on such a complicated structure. Ross recognized this and stated a better "knowledge of the females and larvae should be of great value." With this in mind, the North American *Rhyacophila* females known to the writer are divided into three groups: 1) mosana group; no modifications of fifth or sixth sternites, tenth tergum divided into two lobes, terminal segments of abdomen not telescopic; 2) vuzana group; fifth or sixth sternite or both with mesal process, tenth tergum not bilobed, terminal segments of abdomen are telescopic; 3) coloradensis group; seventh segment highly developed, tenth tergum not bilobed, eighth, ninth, and tenth segments may be withdrawn into seventh segment. It is probable that further knowledge of *Rhyacophila* females will elucidate the phylogeny of the genus, since they are primarily egg-producing organisms and their aquatic oviposition media have not undergone drastic changes.

Two new species of *Rhyacophila*, one new *Agapetus*, one new *Anagapetus*, two new *Atopsyche*, and two new *Culoptila* have been selected for description. The new *Rhyacophila*, *Agapetus*, and *Atopsyche* shed further light on the phylogeny of the family and especially the *Rhyacophila* female of one of the new species. The new *Culoptila* represent a great extension northward of the known distribution of the genus. Types are in the writer's collection unless otherwise indicated.